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### Research Announcement

#### GDP growth rate and population

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#### Abstract

Real GDP growth rate in developed countries is found to be a sum of two terms. The first term is the reciprocal value of the duration of the period of mean income growth with work experience,  $T_{cr}$ . The second term is defined by relative change of the number of people of specific age (9 years of age in the USA),  $(1/2) * dN_9(t) / N_9(t)$ , where  $N_9(t)$  is the number of 9-year-olds at time  $t$ . The  $T_{cr}$  grows as the square root of real GDP per capita. Similar relationship is derived for real GDP per capita. Absolute value of GDP per capita growth is a combination of an economic trend term and the same specific age population term. The first term during last 55 years is equal to \$400 (2002 fixed dollar) divided by the attained value of real GDP per capita. Inversion of the measured GDP data is used to recover corresponding change of the specific age population from 1955 to 2003. The GDP based population recovery method is of a higher accuracy than routine censuses.

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